Replace the paragraph beginning at page 6, line 15 with the following rewritten paragraph:

--Once the initial graphical function definition parsing phase is completed, the statechart parser parsing proceeds in the usual manner, with one exception. Whenever the parser encounters a function invocation in a state or transition, it checks whether the function being invoked is a graphical function. If it is, the parser checks to ensure that the function invocation complies with applicable syntax rules.--

Replace the paragraph beginning at page 6, line 20 with the following rewritten paragraph:

--Optimization Phase: When generating code, statechart systems typically look for opportunities to optimize the generated code. The performance of code generated from statecharts that use graphical functions can be improved by inlining the code generated for simple functions. Inlining is possible only if the function is never invoked recursively. Thus, the optimization phase must first determine for each graphical function whether it is directly or indirectly recursive. A function, F, is directly recursive if F invokes itself. F is indirectly recursive if F is invoked directly or indirectly by any function that F invokes. One method of determining if a graphical function is recursive is to construct the call graph for the function and examine the graph for cycles. If no cycles exist, the function is not recursive and can be inlined.--

Replace the paragraph beginning at page 8, line 21 with the following rewritten paragraph:

--The following restrictions preferably apply to argument and return value properties.

i. Arguments cannot have initial values.

ii. Arguments must have scope Input. Note that the data item property "Input scope" has different meanings in different contexts. In the context of a graphical function, "Input scope" simply means that the data item is a function argument.

iii. Return values must have scope Output. Note that the data property "Output scope" has different meanings in different contexts. In the context of a graphical

function, "Output scope" simply means that the data item is a function return value.

iv. Arguments and return values cannot be referenced outside the graphical function.--

In the claims:

Add the following new claims:

--26. The method of claim 24 wherein the function prototype defines a textual format for invoking the function.

27. The method of claim 26 wherein the graphical representation of the finite state machine includes at least one invocation of the function using the defined textual format.

28. The method of claim 24 further comprising shadowing a function, wherein shadowing comprises using in a function invocation a function definition closest to a point of invocation of the function in a state diagram hierarchy.

29. The method of claim 24 wherein the function is exportable by a statechart and may be invoked anywhere in the finite state machine in which the chart appears, including other charts that define the finite state machine.

30. The method of claim 24 wherein the emulation comprises computer code generation.

31. The method of claim 24, wherein the graphical representation of the function comprises a function prototype defining a textual format for invoking the function; and

wherein the graphical representation of the finite state machine includes an invocation of the function using the defined textual format.

32. A computer readable medium having encoded thereon instructions for causing a computer system to--

receive through a graphical user interface a graphical representation of a finite state machine including a graphical representation of a function; and

emulate the represented finite state machine.

33. The computer readable medium of claim 32, wherein the graphical representation of the function comprises a function prototype defining a textual format for invoking the function; and

wherein the graphical representation of the finite state machine includes an invocation of the function using the defined textual format.--

In the drawings:

Please substitute the enclosed Fig. 9 for the original Fig. 9. In the original Fig. 9 as submitted, certain details did not properly print, which details are supported in the specification at page 5 line 4. Enclosed is one sheet of amended drawings for the application with changes indicated in red, together with a transmittal letter to the Official Draftsman. No new matter has been added.